

**ORDER**

**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

**6750.24D**

3/21/00

**SUBJ: INSTRUMENT LANDING SYSTEM AND ANCILLARY ELECTRONIC  
COMPONENT CONFIGURATION AND PERFORMANCE REQUIREMENTS.**

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**1. PURPOSE.** This order specifies the instrument landing system (ILS) and ancillary electronic component configuration and performance requirements for the various categories of low visibility flight operations.

**2. DISTRIBUTION.** This order is distributed to the director level in the Office of System Safety; to the branch level in the Offices of Airport Safety and Standards, Aviation System Standards, and National Airspace System Implementation; to the Flight Standards, Aircraft Certification, Air Traffic, Air Traffic System Requirements, and Airway Facilities Services; to the branch level in the regional Flight Standards, Air Traffic, Airway Facilities, and Airports Divisions; to all Flight Standards District, and Certificate Management Offices; to all International Field Offices; to all Airport Traffic Control Towers, and Flight Service Stations; to Airway Facilities General National Airspace Sectors, Air Route Traffic Control Center Sectors, and Sector Field Offices and Units; and to all Airports District Offices.

**3. CANCELLATION.** Order 6750.24C, Instrument Landing System (ILS) and Ancillary Electronic Component Configuration and Performance Requirements, dated August 4, 1993, is canceled.

**4. SCOPE.** The requirements of this order apply only to public Standard Instrument Approach Procedures (SIAPs) as well as identified special approach procedures.

**5. DEFINITIONS.**

**a. Continuity.** Is the quality which relates to the rarity of radiated signal interruptions during any approach. The level of continuity of service of the localizer and/or the glidepath is expressed in terms of the probability of not losing the radiated guidance signals.

**b. Integrity.** Is the quality that relates to the trust which can be placed in the correctness of the information supplied by the facility. The level of integrity of the localizer and/or the glidepath is expressed in terms of the probability of not radiating false guidance signals.

**6. EXPLANATION OF APPENDICES.**

**a. Appendix 1.** Lists the basic ILS ground system components, explains the effect on operations when a component is abnormal or inoperative, and prescribes the action requirements.

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Distribution: A-W(SY)-1; A-W(AS/VN/NL/FS/TR/AT/RS/AF)-3;  
A-X(FS/AT/AF/AS)-3; A-FFS-4, 5, 7, 9 (STD); A-FAT-2, 5 (STD);  
A-FAF-2, 3, 7 (STD); A-FAS-1 (STD); AMA-200 (80 cys)

Initiated By: AFS-400

**b. Appendix 2.** Contains the ILS classification system which was developed by the International Civil Aviation Organization (ICAO) All Weather Operations Panel for guidance material in Annex 10 to the Convention on International Civil Aviation. The "Class" designation is used to differentiate between the various performance capabilities of Types I, II, and III ILS equipment, including differences in performance between equipment generically classified as the same "Type."

**7. SYSTEM COMPONENT REQUIREMENTS.** If Title 14 of the Code of Federal Regulations (14 CFR) part 97, Standard Instrument Approach Procedures, must be amended due to a removed or never-installed component, advise the appropriate Flight Procedures Office and Flight Inspection Office.

**a. Localizer and Glide Slope.**

(1) Dual transmitters are an installation requirement when the ILS will be used to support operations which place a high degree of reliance on ILS guidance for positioning through touchdown. This applies to most Category (CAT) III autoland operations, which require level 3 integrity and continuity of service as described in Appendix 2.

(2) The following is the minimum class of performance (Appendix 2) required for an ILS to support a published part 97 CAT II or III, Standard Instrument Approach Procedure (SIAP):

- (a) Class II/T/2 for operations not less than runway visual range (RVR) 1000.
- (b) Class III/D/3 for operations not less than RVR 700.
- (c) Class III/E/3 for operations not less than RVR 600.
- (d) Class III/E/4 for operations less than RVR 600.

(3) To maintain the class of performance required for any given operation, the ILS shall be flight inspected and the necessary maintenance inspections performed accordingly. See Appendix 2, paragraph 5, for additional maintenance information on ILS equipment without automated integrity tests.

(4) A request for CAT II or III operational approval using an ILS with a lower class of performance than specified for a part 97 SIAP may be approved by the Director, Flight Standards Service, AFS-1, if it can be demonstrated that an equivalent level of positioning assurance can be achieved by other means, (i.e., infrared enhancements, millimeter wave radar). Refer to the latest edition of Order 8400.8, Procedures for the Approval of Facilities for FAR Part 121 and Part 135 CAT III Operations, and Order 8400.13, Procedures for Approval of Category II Operations and Less Than Standard Category I Operations on Type 1 Facilities.

**b. Marker Beacons.** An outer marker (or suitable substitute – see paragraph 7c. and Appendix 1) is required for CAT I operations. Middle marker beacons are not required for new Category I ILS installations. An inner marker is required for CAT II operations below RVR 1600 (see Appendix 1).

**c. Compass Locator and Distance Measuring Equipment.** These aids increase operational flexibility and may be needed for transition to the final approach segment, based on the SIAP design. Also, they may be used as a substitute for the outer marker.

**d. Localizer Far Field Monitor (FFM).** This equipment provides additional monitoring of the localizer signal in the runway approach area. Although lengthy (15 to 120 seconds typical) time delays are used to prevent nuisance alarms, the FFM is a useful indicator of critical area incursions and localizer antenna array problems not detected by the localizer integral monitors. Installation of FFM equipment is required to support CAT II and III operations. Because of the high degree of reliance placed on the localizer for CAT III automatic landings, the FFM shall be remotely monitored during CAT II/III operations.

**e. Runway Visual Range (RVR) System.**

(1) Touchdown. A touchdown sensor is an installation requirement for CAT II or III operations.

(2) Midpoint. A midpoint sensor is an installation requirement for all CAT III operations, and for CAT II operations below RVR 1,600 on runways in excess of 8,000 feet.

(3) Rollout. A rollout sensor is an installation requirement for all CAT III operations, and for CAT II operations below RVR 1,600.

**f. Approach Lighting Systems.** If installed, this equipment supports reduced visibility minima for CAT I operations. An Approach Lighting System with Sequenced Flashing Lights (ALSF), CAT I or II Configuration, is required for CAT II and III operations respectively.

**g. Touchdown Zone and Runway Centerline Lights.** These lights are required for CAT II and III operations and for CAT I operations below RVR 2,400.

**h. Runway Edge Lights.** Edge lights are required for the approval of straight-in minima at night. A high intensity capability is required for RVR minima and CAT II and III operations.

**i. Taxiway Lights.** For operations below RVR 600, at least one continuation of taxiway centerline lighting, extending from the runway to the ramp/apron area, is required. All taxiways which are illuminated during these operations shall be provided with red stop bar lights. Stop bar lights shall be controlled by the air traffic control tower when the illuminated taxiway leads into or across any runway being used in operations below RVR 600.

## **8. REMOTE MONITORING REQUIREMENTS.**

**a. General.** Order 8260.19, Flight Procedures and Airspace, paragraphs 212 and 213, defines four categories of navigational aids monitoring and the utilization of those monitoring categories. (These categories should not to be confused with categories of flight operations.) The monitoring categories describe combinations of executive (capable of shutdown) and remote status monitoring. For a facility to be used for instrument flight procedures without limitation, both executive and remote status monitors must be operational (monitoring category 1). Consult Order 8260.19 for additional details.

### **b. CAT II and III Operations.**

(1) All ILS or ancillary electronic components which support CAT II and III operations shall be monitored by personnel who are capable of determining whether the combined components' capability can support continued operation following the loss of, or abnormal status of, a required component. The monitoring personnel shall be cognizant of the contents of this order and equipped to carry out the necessary action requirements promptly.

(2) The remote control/status indicator panel for a Type III ILS (e.g., TI Mark III, Wilcox CAT III, Wilcox Mark 20) is equipped with category status lights in addition to the standard equipment on/off/abnormal lights. The category status lights are intended to conveniently provide the operational status of the ILS to the local control personnel; that is, the lights enunciate the highest category of operation which the ILS is capable of supporting and will downgrade the category following the loss or change to abnormal status of a required system component. Although in some cases this downgrading is more stringent than that required in Appendix 1, the category status lights shall be considered valid and appropriate Notice to Airmen (NOTAM) action shall be initiated, unless the following conditions can be met:

(a) An ILS technician is continuously monitoring the ILS equipment monitor panel. The panel must be displaying the status of all subsystems which normally provide electronic inputs to the category status light circuitry.

(b) The technician has the capability to immediately communicate with air traffic or any other personnel assigned the responsibility of notifying the pilot of an inoperative component or change in operational status per the checklist in Appendix 1.

(c) There is a written agreement between the local airway facilities and air traffic personnel that the category status lights can be disregarded, that the technician will monitor the required parameters and inform air traffic personnel of any change in equipment status, and that air traffic personnel will implement the checklist in Appendix 1.

### **c. Visual Aid Lights.**

(1) Runway edge, centerline, and touchdown zone lights which support CAT II or III operations shall be remotely monitored, or an interim procedure shall be implemented to visually

verify their operation. Remote monitoring systems shall be capable of detecting when more than 10 percent of the lights are inoperative. The lighting system/configuration shall be considered inoperative when more than 10 percent of the lights are not functioning. The interim procedure to visually verify operation of runway edge, centerline, and touchdown zone lights shall assure a visual inspection is conducted prior to the commencement of CAT II or III operations and repeated through physical inspections and/or pilot reports at least every 2 hours thereafter if still in CAT II or III conditions.

(2) Taxiway lights and individual airport/runway lights do not have to be remotely monitored. However, they shall be inspected at an interval which assures that it would be very unlikely that no more than 10 percent of the lights and two adjacent lights would be inoperative, taking into consideration lamp life, environmental conditions, quality of power, etc.

**9. RESTORATION REQUIREMENTS.** When the visibility at an airport which provides CAT II or III operational service is, or is forecast to be, at or less than 1/2 statute mile, the ILS equipment restoration priority shall be level B1 or higher as necessary to support continuous maintenance coverage locations, etc. Refer to the latest edition of Order 6030.31, Restoration of Operational Facilities.

**10. LOCALIZER CRITICAL AREAS.** The latest edition of Order 6750.16, Siting Criteria for Instrument Landing Systems, describes localizer and glide slope critical areas which shall be marked and protected from parking and the unlimited movement of surface and air traffic, to ensure the continuous integrity of the signal received by the user aircraft.

a. The entire length of the longitudinal axis of the aircraft shall be clear of the critical area when conditions are such that the area must be protected. An aircraft with its longitudinal axis aligned with the edge of a critical area is not considered to be violating the critical area.

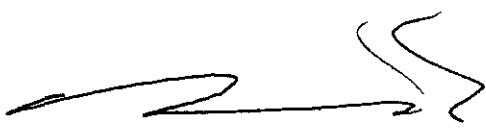
b. The worst case alignment of an aircraft for critical area considerations is with its longitudinal axis perpendicular to the runway (e.g., an aircraft departing the runway after landing or taxiing across the runway).

c. The airport authority which controls ground traffic movements must assure that appropriate controls and devices are correctly located, and specific holding instructions implemented when necessary, to protect the critical areas from ground traffic approaching or departing an active runway if the critical area dimension exceeds the distance of the normal runway holding position marking from the runway centerline. Also, procedures must be implemented to determine when an aircraft is clear of the critical area when exiting the runway. Taxiway centerline lead-off lights, where installed, shall be color-coded as alternating green and yellow to denote the critical area. For taxiways not equipped with centerline lights, a "Critical Area Boundary" sign may be installed on the back side of the ILS sign to indicate the critical area boundary.

d. Where the standard critical area has a significant adverse impact on a specific taxi route, etc., it may be possible through operational constraints to provide relief on a case-by-case

basis (e.g., considering the varying size of aircraft). Mathematical modeling techniques are readily available to facilitate this consideration.

**11. DIRECTIVE FEEDBACK.** Any deficiencies found, clarifications needed, or suggested improvements regarding the content of this order should be forwarded to the originating office, Attention: Directives Management Officer, for consideration. Your assistance is welcome. Federal Aviation Administration Form 1320-19, Directive Feedback Information, is located on the last page of this order for your convenience. If an interpretation is urgently needed, you may call the originating office for guidance, but you should also use the tearout sheet as a follow up to verbal conversation.



L. Nicholas Lacey  
Director, Flight Standards Service

## APPENDIX 1. ABNORMAL CHECKLIST

Component	Situation	CAT	Effect	Action Requirement
Localizer (LOC) and Glide Slope (GS)	One transmitter is inoperative.  NOTE: 2 transmitters required to commence CAT II or CAT III operations.	I	No effect	Corrective maintenance
		II	No effect if one transmitter fails during CAT II operations. See NOTE 1.	Expedite corrective maintenance
		III	Denies CAT III operations below RVR600  NOTE 1: Should weather improve to CAT I for at least four hours and subsequently deteriorate to CAT II/III conditions, standby equipment must be restored prior to resuming CAT II/III operations.	The facility/organization responsible shall ensure that appropriate NOTAM action is taken, and expedite corrective maintenance.
Far Field Monitor (FFM) Sensor(s)	At least one sensor (receiver subsystem) operating & not in alarm	All	No effect	Corrective maintenance
	All sensors (receiver subsystems) inoperative or in alarm	All	If ILS critical areas are known to be clear, continue operations. Should weather improve to CAT I for at least four hours and subsequently deteriorate to CAT II/III conditions, FFM sensor(s) must be restored prior to resuming CAT II/III operations. (NOTE: FFM installation not required for CAT I operations; if installed, however, use the preceding text.)	Cat I -- Corrective maintenance  Cat II & III -- Expedite corrective maintenance

### NOTES:

- (1) Where the action requirement is to inform the aircraft of the inoperative component situation, do so in accordance with the latest edition of Order 7110.65, Air Traffic Control, in paragraphs 4-70 (4-6-1), Airport Conditions, and 3-32 (3-3-3), Timely Information. Pilots will adjust minima/discontinue operations predicated on the inoperative component notification in accordance with the inoperative components table, the approved operations specifications, and/or Federal Aviation Administration (FAA) letter of authorization.
- (1) Where the action requirement is to initiate a Notice to Airmen (NOTAM) to disallow the operation, do so in accordance with the latest edition of Order 7930.2, Notices to Airmen, in the section on NAVAIDS, Communications Outlets, and Service.
- (2) "CAT" (Category) INDICATES THE OPERATION BEING CONDUCTED OR APPROVED

## APPENDIX 1. (continued)

Component	Situation	CAT	Effect	Action Requirement
FFM Remote Monitoring Indicator	Status indications not available or abnormal (e.g., remoting lines out of service, FFM bypassed); NOTE: These indications typically have time delays of 15-120 seconds.	All	If ILS critical areas are known to be clear, continue operations. Should weather improve to CAT I for at least four hours and subsequently deteriorate to CAT II/III conditions, FFM sensor(s) must be restored prior to resuming CAT II/III operations. (NOTE: FFM installation not required for CAT I operations; if installed, however, use the preceding text.)	Cat I -- Corrective maintenance  Cat II & III -- Expedite corrective maintenance
LOC or GS Executive (Integrity) Monitors (excludes FFM function)	One monitor in a dual-channel system fails, reducing system integrity level.	I	No effect (dual monitors not required)	Corrective maintenance
		II	No effect if fails during CAT II operations. Should weather improve to CAT I for at least four hours and subsequently deteriorate to CAT II conditions, failed monitor must be restored prior to resuming operations.	Expedite corrective maintenance
		III	Denies operations	Initiate NOTAM action and expedite corrective maintenance
Outer Marker Beacon (OM); Compass Locator (COMLO); Distance Measuring Equipment (DME)	Inoperative	All	If the final approach fix (FAF) can be identified by one or more of these facilities and/or another NAVAID (e.g., radar), or published waypoint, there is no effect. If the FAF cannot be identified (e.g., no method available for timing of descent), non-precision operations cannot be conducted.	Notify aircraft; initiate NOTAM action and corrective maintenance
Middle Marker Beacon (MM)	Inoperative	All	No effect	Notify aircraft; initiate NOTAM action and corrective maintenance



**APPENDIX 1. (continued)**

<b>Component</b>	<b>Situation</b>	<b>CAT</b>	<b>Effect</b>	<b>Action Requirement</b>
Inner Marker Beacon (IM)	Inoperative	I	No effect	Notify aircraft; initiate NOTAM action
		II	Limits lowest visibility to RVR 1600 unless aircraft equipped with radio altimeter and Standard Instrument Approach Procedure (SIAP) does not prohibit its use.	Notify aircraft; initiate NOTAM action
		III	No effect	Notify aircraft; initiate NOTAM action
Touchdown RVR	Inoperative (Some operators using aircraft equipped with fail-operational rollout control systems are authorized to continue operations with any one transmissometer temporarily inoperative)	I	Increases CAT I minima to 1/2 mile	Notify aircraft of the inoperative component, and initiate NOTAM action.
		II & III	Denies operations	Notify aircraft of the inoperative component, and initiate NOTAM action. Expedite corrective maintenance.
Midpoint RVR	Inoperative (Some operators using aircraft equipped with fail-operational rollout control systems are authorized to continue operations with any one transmissometer temporarily inoperative)	I	No effect	Notify aircraft of the inoperative component, and initiate NOTAM action.
		II	Increase CATII minima to RVR 1600 unless rollout RVR is operative -- i.e., rollout can be used as a substitute.	Notify aircraft of the inoperative component, and initiate NOTAM action. Expedite corrective maintenance.
		III	Denies operations	Notify aircraft of the inoperative component, and initiate NOTAM action. Expedite corrective maintenance.
Rollout RVR	Inoperative (Some operators using aircraft equipped with fail-operational rollout control systems are authorized to continue operations with any one transmissometer temporarily inoperative)	I	No effect	Notify aircraft of the inoperative component, and initiate NOTAM action.
		II	Required for minima below RVR 1600 unless midpoint RVR is operative -- i.e., midpoint can be used as a substitute.	Notify aircraft of the inoperative component, and initiate NOTAM action. Expedite corrective maintenance.
		III	Denies operations	Notify aircraft of the inoperative component, and initiate NOTAM action. Expedite corrective maintenance.

## APPENDIX 1. (continued)

Component	Situation	CAT	Effect	Action Requirement
Approach Lighting System (Excluding SFL/RAIL)	Inoperative	I	Increases visibility to 3/4 mile or RVR 4000	Notify aircraft of the inoperative component, and initiate NOTAM action.
		II & III	Denies operations	Notify aircraft of the inoperative component, and initiate NOTAM identifying inoperative component. Expedite corrective maintenance.
Approach Lighting System	ALSF being operated as SALS	I	No effect	Notify aircraft ALSF is inoperative as above. Issue NOTAM indicating ALSF RWYXX Inop. SALS Approach Lighting System is available UFN (date). With notation that CATII operators verify CATII with SALS authorization.
Power Source for Approach Lighting System (Excluding SFL/RAIL)	Main or standby (commercial) power source inoperative	I	No effect	None
		II & III	Denies operations unless lights can be visually or are remotely monitored continuously, and aircraft can be informed immediately if a failure occurs.	Initiate NOTAM action and expedite corrective maintenance.
Sequence Flashing Lights (SFL/RAIL)	Inoperative	I	RAIL: Increases visibility to 3/4 mile or RVR 4000 SFL: No effect	Notify aircraft of the inoperative component, and initiate NOTAM action.
		II	Denies operations	Notify aircraft of the inoperative component, and initiate NOTAM action. Expedite corrective maintenance.
		III	No effect	Expedite corrective maintenance.
Standby Power Source for SFL/RAIL	Inoperative	I	No effect	None
		II	Denies operations unless lights can be visually or are remotely monitored continuously, and aircraft can be informed immediately if a failure occurs.	Initiate NOTAM action and expedite corrective maintenance.
		III	No effect	Initiate NOTAM action and expedite corrective maintenance.

**APPENDIX 1. (continued)**

<b>Component</b>	<b>Situation</b>	<b>CAT</b>	<b>Effect</b>	<b>Action Requirement</b>
Standby Power Source for TDZL and/or RCLS Lights	Inoperative	I	No effect	None
		II	Denies operations unless lights can be visually or are remotely monitored continuously, and aircraft can be informed immediately if a failure occurs.	Initiate NOTAM action and expedite corrective maintenance.
		III	Denies operations	Initiate NOTAM action and expedite corrective maintenance.
Runway Edge Lights	More than 10% of the runway edge lights are not functioning	I	Day: Minima below RVR 2,400 not authorized. Night: Denies TITLE 14 CFR Part 97 straight-in landing minima	Notify aircraft of the inoperative component, and initiate NOTAM action.
		II & III	Denies operations	Notify aircraft of the inoperative component, and initiate NOTAM action. Expedite corrective maintenance.
Standby Power Source for Runway Edge Lights	Inoperative	I	No effect	None
		II & III	Denies operations unless lights can be visually or are remotely monitored continuously, and aircraft can be informed immediately if a failure occurs.	Notify aircraft of the inoperative component, and initiate NOTAM action. Expedite corrective maintenance.
Taxiway Centerline Lights	Visibility is less than RVR 600, and more than 10% of the lights on the active taxiway(s) are not functioning	I & II	Not Applicable	None
		III	Denies operations below RVR 600 unless alternate procedures have been approved by Air Traffic and Flight Standards.	Notify aircraft of the inoperative component, and initiate NOTAM action. Expedite corrective maintenance.

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Appendix 1



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## APPENDIX 2. INSTRUMENT LANDING SYSTEM (ILS) CLASSIFICATION SYSTEM

1. The ILS classification system specified in this appendix provides a more comprehensive method of describing ILS performance than the Facility Performance Category (CAT) method alone.

2. A facility's "Class" of performance is defined by using three characters as follows:

a. **I, II, or III:** With the exception of Localizer Facility Performance CAT III course structure, this character indicates conformance to the facility performance category standards contained in the International Civil Aviation Organization (ICAO) Annex 10, unless superseded by a Federal Aviation Administration (FAA) directive.

b. **A, B, C, T (Threshold), D, or E:** This character defines the ILS point to which the localizer conforms to the Facility Performance CAT III course structure tolerances.

c. **1, 2, 3, or 4:** This number indicates the level of integrity and continuity of service given in Appendix 2, Table 1.

(1) Level 1 rated ILS equipment is used to support low visibility operations for which positioning guidance below approximately 200 feet height above touchdown (HAT) is provided by other means, such as visual cues.

(2) Level 2 rated ILS equipment is used to support reduced visibility operations for which positioning guidance below 100 feet HAT is supplemented by other means, such as visual cues.

(3) Level 3 rated ILS equipment is used to support operations which place a high degree of reliance on ILS guidance for positioning through touchdown.

(4) Level 4 rated ILS equipment is used to support operations which place a high degree of reliance on ILS guidance throughout touchdown and rollout.

3. As an example, an ILS that conforms to the ICAO Annex 10 Facility Performance CAT III standards, meets the CAT III localizer course structure criteria to ILS point "D," and conforms to the integrity and continuity of service objectives of level 3 would be described as "Class IIID3." An ILS which conforms to ICAO Annex 10 Facility Performance CAT I standards, has a localizer CAT III course structure to point "E," and conforms the integrity and continuity of service objectives of level 2 would be described as "Class IE2." However, when facility performance standards are monitored to CAT II standards, this same facility having a localizer CAT III course structure to point "E," and conforming to the integrity and continuity of service objectives to level 2 would be described as "Class IIE2."

**APPENDIX 2. (continued)**

**Table 1. -- Minimum Localizer (LOC) and Glide Slope (GS) Integrity and Continuity Levels**

Level	Integrity	Continuity	MTBO (Hours)
1	Not demonstrated, or less than required for Level 2		
2	1 - $1 \times 10^{-7}$ in any one landing	1 - $4 \times 10^{-6}$ in any period of 15 seconds	1000
3	1 - $0.5 \times 10^{-9}$ in any one landing	1 - $2 \times 10^{-6}$ in any period of 15 seconds	2000
4	1 - $0.5 \times 10^{-9}$ in any one landing	1 - $2 \times 10^{-6}$ in any period of: 30 seconds (LOC) 15 seconds (GS)	4000 (LOC) 2000 (GS)

**NOTES:**

1. Some earlier design ILS equipment types have been determined to require minimum demonstrated Mean Time Between Outage (MTBO) performance, and/or manual integrity tests, to conform to the Integrity and Continuity level requirements of Table 1. Texas Instruments Mark III, Wilcox Category III (also known as Mark II and Mark III), and GRN-27 ILS equipment must exhibit the MTBO values in Table 1.

2. In addition to the MTBO requirements, the GRN-27 ILS must pass a weekly (Level 2) or Daily (Levels 3 and 4) manual integrity test. This is accomplished by simulating a monitor fault and confirming that the appropriate automatic equipment transfer or shutdown occurs. For example, if a GRN-27 ILS supports CAT III operations, the integrity test must be performed every 24 hours, or prior to allowing landing operations below runway visual range (RVR) 1,200, and repeated every 24 hours thereafter if CAT III conditions continue to exist. If the required integrity cannot be maintained, CAT III operations are not authorized and may not continue, and Notice to Airmen (NOTAM) action must be taken.

3. Mean Time Between Outage (MTBO) is calculated by dividing a facility's total in service time by the number of unanticipated operational outages during the same period. For existing facilities, it is determined using historical data that has been established over at least a one-year period. Pending actual performance data for new or upgraded facilities, it can be determined by using the anticipated performance record that can be REASONABLY expected considering the past performance of similar facilities using the same equipment and installation procedures.

4. Additional information on integrity and continuity of service is contained in Attachment C to Part 1 of the ICAO Annex 10, Volume I.

5. As of March 1998, ICAO has proposed changes to ICAO Annex 10 as a result of AWOP 16. Some of the proposals affect integrity and continuity requirements, and these changes have NOT been included in Appendix 2, Table 1.



U.S. Department  
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**Federal Aviation  
Administration**

### Directive Feedback Information

Please submit any written comments or recommendations for improving this directive, or suggest new items or subjects to be added to it. Also, if you find an error, please tell us about it,

Subject: Order 6750.24D, Instrument Landing System (ILS) and Ancillary Electronic Component Configuration and Performance Requirements

To: Directive Management Officer, \_\_\_\_\_

*(Please check all appropriate line items)*

☐ An error (procedural or typographical) has been noted in paragraph \_\_\_\_\_ on page \_\_\_\_\_.

☐ Recommend paragraph \_\_\_\_\_ on page \_\_\_\_\_ be changed as follows:  
*(attach separate sheet if necessary)*

☐ In a future change to this directive, please include coverage on the following subject  
*(briefly describe what you want added):*

☐ Other comments:

☐ I would like to discuss the above. Please contact me.

Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

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